



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/633,756	08/07/2000	Sharon Duvdevani	U 012894-7	3691
7590 03/22/2004				
Ladas & Parry 26 West 61st Street New York, NY 10023		EXAMINER KIBLER, VIRGINIA M		
		ART UNIT PAPER NUMBER		
		2623 10		
DATE MAILED: 03/22/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

MN

Office Action Summary	Application No. 09/633,756	Applicant(s) DUVDEVANI ET AL.	
	Examiner Virginia M Kibler	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/31/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment received on 12/31/03 has been entered. Claims 1-8 remain pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Jacques (FR 2687091).

Regarding claim 1, Jacques discloses a method for inspecting objects including creating a reference image for a representative object, the reference image comprising an at least partially vectorized first representation of boundaries representing the representative object, acquiring an image of an object under inspection comprising a second representation of boundaries representing the object under inspection, and comparing a location of at least some boundaries in the second representation of boundaries to the partially vectorized first representation of boundaries, thereby to identify defects (Abstract).

Regarding claim 2, Jacques discloses a comparing step employing a user-selected variable threshold for acceptable distance between corresponding portions of the boundaries in the first and second representations (Page 27, lines 24-35).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacques (FR 2687091) in view of Aloni et al. (5,619,429).

Regarding claim 3, Jacques discloses inspecting objects including creating a reference image for a representative object, the reference image comprising an at least partially vectorized first representation of boundaries within the image, thereby a boundary identifier, acquiring an image of an object under inspection comprising a second representation of boundaries within the image, and comparing the second representation of boundaries to a location of corresponding boundaries in the partially vectorized first representation of boundaries, thereby to identify hardware defects (Abstract). While Jacques does not appear to specify the hardware defect candidate is implemented in hardware, the implementation of the method as a hardware device is well known to electronic engineers skilled in the art of designing modern digital signal processing boards. Jacques does not appear to recognize including a software candidate defect inspector to identify false alarms in software. However, Aloni et al. ("Aloni") teaches that it is known to provide a hardware candidate defect identifier to identify candidate defects in the image in hardware (Figure 2, components 32 and 64; Col. 14, lines 4-41; Col. 26, line 67, Col.

Art Unit: 2623

27, line 1) and a software candidate defect inspector receiving output from the hardware candidate defect identifier to identify at least one false alarm with the output in software (Col. 14, lines 53-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the defect inspection disclosed by Jacques to include a inspector for false alarms as taught by Aloni because it verifies the actual defects and improves reliability of defect recognition system.

Regarding claim 4, Jacques discloses the boundary identifier comprising a boundary identifier operative to generate a representation of boundaries of known elements in the image. Jacques does not appear to expressly state a hardware boundary identifier in hardware. While Jacques does not appear to specify the hardware boundary identifier implemented in hardware, the implementation of the method as a hardware device is well known to electronic engineers skilled in the art of designing modern digital signal processing boards as taught by Aloni (Figure 2, components 32 and 64; Col. 14, lines 4-41; Col. 26, line 67, Col. 27, line 1).

Regarding claim 7, Jacques discloses the hardware defect identifier employs the representation of boundaries in order to identify the defects (Abstract).

Regarding claim 5, Jacques does not appear to recognize using a software candidate defect identifier in software. However, Aloni teaches that it is well known to perform defect detection with hardware and software techniques (Col. 14, lines 53-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the defect detection disclosed by Jacques to include using both hardware and software detection as taught by Aloni because when used in conjunction proficiency of defect recognition will be increased.

Regarding claim 6, Aloni discloses a software candidate defect inspector receiving output from the hardware candidate defect identifier to identify at least one false alarm with the output in software and software candidate defect identifier (Col. 14, lines 42-65; Col. 26, lines 66-67, Col. 27, lines 1-5).

Regarding claim 8, the arguments analogous to those presented above for claim 7 are applicable to claim 8.

Response to Arguments

6. Applicant's arguments filed 12/31/03 have been fully considered but they are not persuasive.

Summary of Applicant's Argument: Jacques fails to suggest comparing a location of at least some boundaries in a representation of boundaries in an object to be inspected to a location of corresponding boundaries in an at least partially vectorized representation of boundaries in a reference object.

Examiner's Response: Applicant describes the inspection method disclosed by Jacques as extracting contours of an object and making polygonal approximation in which the segments are vectorized; the series of angles between the successive segments are compared with corresponding angles in a reference object (Page 4). Comparing a corresponding angle between two edges compares a location of at least some boundaries. Thereby, Jacques meets the claim limitation of comparing a location of at least some boundaries in the second representation of boundaries to a location of corresponding boundaries in said at least partially vectorized first representation of boundaries.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Other Prior Arts Cited

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 6,487,307 to Hennessey et al. for inspecting structures on an object.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

Art Unit: 2623

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

W

VK

3/9/04

MEHRDAD DASTOURI
PRIMARY EXAMINER

Mehrdad Dastouri